Table S1. Studies included in PopPK model development

Study	Study description	Dose and administration	Number of patients	PK[c] sampling schedule
DREAMM-1[1] **(NCT02064387)**	Open-label Phase I two-part study: Part 1 dose escalation; Part 2 dose expansion to evaluate safety and efficacy of belamaf monotherapy in patients with RRMM who had received prior therapy with alkylators, PIs, and immunomodulatory agents.	Part 1 Dose escalation: 0.03, 0.06, 0.12, 0.24, 0.48, 0.96, 1.92, 2.5, and 3.4 mg/kg; Part 2 Dose expansion: 3.4 mg/kg Administration: 1-h IV infusion, Q3W	Part 1, N=38 on frozen liquid Part 2, N=35 on frozen liquid	Part 1 C1D1: Pre-dose, 0.5 h post SOI, EOI, 1 h post EOI, 3 h post EOI, 8 h post EOI, 24 h post EOI (D2), D8, D15 C2D1 and C3D1: Pre-dose and EOI Part 2 C1D1, C2D1, C3D1, and C5D1: Pre-dose and EOI
DREAMM-2[2] **(NCT03525678)**	Ongoing, open-label, two-arm, randomized Phase II multicenter study evaluating	Dose: 2.5 mg/kg or 3.4 mg/kg Administration:	N=196[a] on	Initial protocol C1D1: Pre-dose, EOI, 1 h post-EOI, 3 h post EOI C2D1, C6D1, C9D1, and C12D1: Pre-dose and EOI

	the efficacy and safety of single-agent belamaf in patients with RRMM that had progressed on or after receiving ≥3 prior lines of therapy (refractory to PIs and immunomodulatory agents, and refractory and/or intolerant to an anti-CD38 mAb)	30-min IV infusion, Q3W	frozen liquid at 2.5 mg/kg and 3.4 mg/kg N=25[b] on lyophile at 3.4 mg/kg	<u>Following protocol amendment 2</u> C1D1 and C3D1: Pre-dose, EOI, 2 h after SOI, 24 h after SOI (D2); D4; D8–15 (one sample); C2D1, C6D1, C9D1, and C12D1: Pre-dose and EOI

[a]Randomized, n=196; received belamaf as frozen liquid presentation, n=194

[b]Randomized, n=25; received belamaf as lyophilized presentation, n=24

[c]For PK measurements, blood samples were taken pre- and post-dose and analyzed for belamaf, total mAb, cys-mcMMAF, and free sBCMA concentrations using validated bioanalytical methods. The belamaf and total mAb assay quantified both free entity and entity bound to sBCMA

[1]Trudel, S et al. *Lancet Oncol*.; 19, 1641-53 (2018); [2]Lonial S et al. *Lancet Oncol*. 21(2), 207-21 (2020).

belamaf, belantamab mafodotin; C, cycle; cys-mcMMAF, cysteine maleimidocaproyl monomethyl auristatin F; D, day; EOI, end of infusion; h, hour; IMWG, International Myeloma Working Group; IV, intravenous; mAb, monoclonal antibody; PI, proteasome inhibitors; PK, pharmacokinetic; Pop, population; Q3W, every 3 weeks; RRMM, relapsed/refractory multiple myeloma; sBCMA, soluble B-cell maturation antigen; SOI, start of infusion